

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

994 Jefferson Street  
Fall River, MA 02721  
+1.508.678.2303

## Spectrum Lighting Photometric Lab

### Luminaire

SGE12BX 80L 35K ND DO101 AR12BX MW WF  
Nom. 12" Diam x 10" H, Open aperture

### Test Number

SP-00686\_1

### Test Date

The results contained in this report pertain only to this IES file.

### Summary of Results

#### Power

Input Watts	60 W
-------------	------

#### Lumen Output

Output Lumens	6505
Efficacy	108.41 lm/W

#### Luminous Dimensions

0° - 180° Size	-0.97
90° - 270° Size	-0.97
Height	0

#### Spacing Criterion

Two luminaires, plane 0°	0.39
Two luminaires, plane 90°	0.4
Four luminaires	0.41

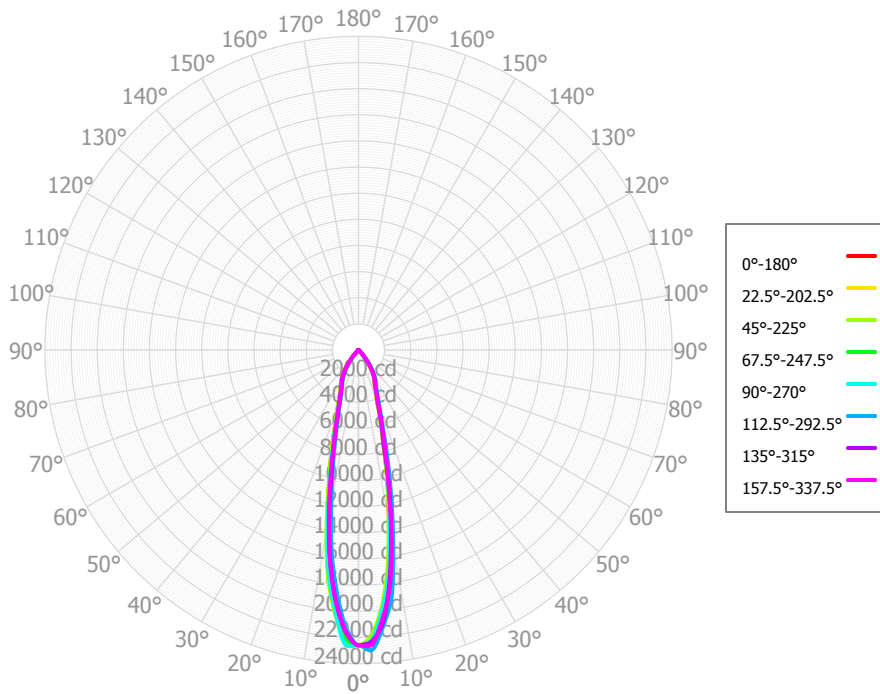
#### Full Beam Angle

0° - 180°	23°
90° - 270°	23°

### IES File Header Contents

Keyword	Value
TEST	SP-00686_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/7/2018
UPDATE	9/27/2019
LUMCAT	SGE12BX 80L 35K ND DO101 AR12BX MW WF
LUMINAIRE	Nom. 12" Diam x 10" H, Open aperture
OTHER	Matte White reflector trim
OTHER	Deep regressed retrofit high output LED downlight
OTHER	BX Series, Narrow Beam
OTHER	23.6 Deg Beam Angle
LAMPCAT	N/A
LAMP	N/A, Bridgelux Vero 29
OTHER	Dimmable driver tested at 100% output
OTHER	Tested CCT: 3500K
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CCTMULT	CCT Output: 27K x 0.932, 30K x 1.00, 40K x 1.01
_LAMPMULT	60L x 0.76, 70L x 0.86
_CRI	80

**Candela Polar Plot**



**Zonal Lumen Summary**

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	1,728.46	26.57%	90.00° - 100.00°	0.08	0.00%
10.00° - 20.00°	2,139.39	32.89%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1,456.85	22.40%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	994.22	15.28%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	181.72	2.79%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	1.70	0.03%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	0.87	0.01%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.78	0.01%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.74	0.01%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	6,504.74	100.00%	0.00° - 180.00°	6,504.82	100.00%

### Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°	202.50°	225.00°	247.50°	270.00°	292.50°	315.00°	330.00°
0.00°	22,597.93	22,597.93	22,597.93	22,597.93	22,597.93	22,597.93	22,597.93	22,597.93	22,597.93	22,597.93	22,597.93	22,597.93	22,597.93	22,597.93	22,597.93	22,597.93
2.50°	22,184.82	22,108.97	21,937.70	22,351.08	22,295.13	21,377.47	21,682.90	21,645.59	22,212.40	21,847.64	22,339.03	22,151.79	22,609.21	22,993.67	22,357.23	22,609.21
5.00°	20,156.02	20,319.92	19,951.51	20,277.57	20,237.59	18,758.46	19,492.47	19,493.97	20,042.23	20,180.52	20,361.09	20,027.14	20,138.48	21,300.66	21,069.42	20,138.48
7.50°	17,310.01	17,429.33	16,955.46	17,762.55	17,566.98	15,709.40	16,501.20	16,563.37	17,556.88	17,060.85	17,716.46	17,055.68	17,390.33	19,259.42	18,070.80	17,390.33
10.00°	13,448.01	13,983.48	13,258.09	14,084.18	13,853.91	11,987.72	13,038.15	12,888.55	13,870.42	13,532.60	14,114.50	13,264.50	13,488.01	15,306.90	14,321.95	13,488.01
12.50°	10,174.54	10,273.32	10,135.50	10,472.50	10,583.53	9,005.29	9,431.05	9,824.70	10,379.35	10,390.46	10,394.46	10,109.33	9,921.16	11,559.01	10,823.37	10,109.33
15.00°	7,290.63	7,759.07	7,208.51	7,943.93	7,716.97	6,645.90	7,250.40	7,069.94	7,878.17	7,407.02	8,001.75	7,280.66	7,414.78	8,533.98	7,371.75	7,407.02
17.50°	5,531.39	5,489.48	5,562.51	5,753.38	5,858.49	5,147.83	5,280.65	5,495.89	5,794.00	5,820.06	5,822.95	5,613.51	5,438.57	6,118.04	5,774.14	5,613.51
20.00°	4,144.86	4,420.70	4,112.44	4,549.54	4,484.00	4,027.21	4,340.76	4,186.80	4,606.23	4,441.38	4,665.83	4,212.75	4,281.33	4,724.73	4,310.47	4,441.38
22.50°	3,491.72	3,459.95	3,518.57	3,641.72	3,747.13	3,439.15	3,516.76	3,603.32	3,738.23	3,727.92	3,717.87	3,586.59	3,505.04	3,766.35	3,606.64	3,586.59
25.00°	2,930.84	3,054.67	2,986.59	3,157.96	3,142.45	2,946.69	3,101.72	3,076.34	3,230.61	3,171.07	3,202.81	3,025.70	3,045.98	3,200.00	3,027.08	3,045.98
27.50°	2,655.87	2,675.99	2,700.95	2,783.91	2,846.93	2,656.24	2,731.87	2,790.97	2,863.29	2,858.06	2,800.22	2,747.39	2,718.71	2,829.11	2,729.62	2,858.06
30.00°	2,347.42	2,362.01	2,371.09	2,495.88	2,541.25	2,347.98	2,436.80	2,481.98	2,580.95	2,523.71	2,520.24	2,436.13	2,448.39	2,550.79	2,398.51	2,523.71
32.50°	1,914.81	1,984.84	1,961.49	2,107.33	2,137.61	1,941.38	2,072.53	2,110.61	2,221.99	2,171.44	2,154.52	2,036.41	2,028.04	2,155.21	2,027.11	2,171.44
35.00°	1,474.91	1,527.51	1,522.72	1,678.99	1,718.37	1,514.46	1,646.73	1,695.88	1,840.86	1,756.01	1,738.69	1,614.99	1,581.42	1,735.83	1,603.93	1,756.01
37.50°	1,022.14	1,088.39	1,055.46	1,222.11	1,260.82	1,041.45	1,191.20	1,223.05	1,376.93	1,313.03	1,300.37	1,164.10	1,138.50	1,281.44	1,147.80	1,313.03
40.00°	632.76	661.58	660.07	763.38	822.38	633.45	721.80	791.62	913.54	870.28	855.85	753.47	713.28	842.69	758.63	870.28
42.50°	302.43	360.46	301.37	420.79	408.36	302.18	406.97	390.17	529.37	427.96	506.64	372.38	383.61	506.37	390.57	427.96
45.00°	124.46	102.12	132.75	124.30	165.96	117.23	122.75	175.19	206.07	215.48	185.16	166.33	130.48	227.63	199.21	206.07
47.50°	22.52	40.17	8.31	51.22	40.45	25.35	57.08	28.25	82.67	32.95	81.18	25.24	48.59	90.35	34.76	82.67
50.00°	3.29	1.64	2.66	2.21	5.38	2.72	2.88	6.77	5.79	14.50	2.20	5.60	3.57	10.73	15.89	3.96
52.50°	1.84	1.55	1.22	2.70	1.38	1.50	1.93	1.72	2.90	1.68	1.67	2.30	1.57	3.92	1.16	2.90
55.00°	1.72	1.47	1.25	2.49	0.90	1.15	1.43	1.53	1.36	1.55	1.30	1.54	0.85	1.09	0.97	1.36
57.50°	1.57	1.47	1.33	1.51	0.81	0.87	2.03	1.33	0.99	1.32	1.15	0.91	0.94	0.96	0.86	0.99
60.00°	1.01	1.32	1.57	1.32	0.70	0.70	1.95	1.10	0.75	0.96	1.02	0.82	0.92	0.86	0.91	0.75
62.50°	0.70	0.93	1.43	1.58	0.68	0.61	1.02	0.87	0.57	0.84	0.88	0.69	0.86	0.77	0.89	0.57
65.00°	1.05	0.91	0.78	1.25	0.97	0.81	0.61	0.64	0.82	0.87	0.87	0.48	1.14	1.12	0.79	0.57
67.50°	1.02	1.26	0.63	0.75	1.05	0.78	0.53	0.66	1.16	0.70	0.91	0.40	1.39	1.46	0.93	0.63
70.00°	0.53	1.53	0.85	0.77	0.75	0.41	0.66	0.93	1.02	0.48	0.61	0.44	0.95	1.14	1.18	0.53
72.50°	0.46	1.77	0.75	0.78	0.60	0.44	0.83	0.78	0.86	0.74	0.30	0.70	0.73	0.79	0.80	0.50
75.00°	0.61	1.17	0.58	0.68	0.57	0.75	0.83	0.52	0.64	0.83	0.43	0.99	0.99	0.38	0.51	0.72
77.50°	0.73	0.81	0.53	0.58	1.02	0.88	0.66	1.01	0.57	0.49	0.61	0.57	1.29	0.89	0.78	0.55
80.00°	0.72	0.85	0.68	0.59	0.87	0.84	0.37	1.06	0.68	0.44	0.72	0.49	1.31	1.29	0.55	0.33
82.50°	0.64	0.47	0.71	0.93	0.63	0.71	0.74	0.88	1.02	0.56	0.37	0.54	0.77	0.76	0.44	0.46
85.00°	0.63	0.81	0.56	0.81	1.05	0.61	1.02	0.85	1.04	0.98	0.38	0.54	0.52	0.38	0.47	1.13
87.50°	0.88	0.73	0.54	0.66	0.63	0.74	0.59	0.54	0.80	0.58	0.93	0.54	0.70	0.64	0.60	0.80
90.00°	0.77	0.15	0.22	0.13	0.83	0.89	0.41	0.71	0.31	1.01	0.12	0.96	0.57	0.21	0.79	0.83
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
<b>RCR</b>	<b>0</b>	7,744	7,744	7,744	7,744	7,564	7,564	7,564	7,564	7,228	7,228	7,228	6,920	6,920	6,920	6,637	6,637	6,505
	<b>1</b>	7,442	7,286	7,147	7,021	7,285	7,147	7,023	6,910	6,886	6,788	6,698	6,647	6,571	6,500	6,426	6,368	6,242
	<b>2</b>	7,145	6,876	6,654	6,467	7,007	6,767	6,566	6,395	6,561	6,397	6,256	6,371	6,239	6,124	6,196	6,091	5,973
	<b>3</b>	6,861	6,510	6,239	6,022	6,739	6,423	6,174	5,974	6,258	6,051	5,881	6,106	5,934	5,790	5,964	5,824	5,703
	<b>4</b>	6,591	6,182	5,882	5,653	6,483	6,111	5,834	5,620	5,978	5,742	5,555	5,854	5,654	5,492	5,738	5,570	5,431
	<b>5</b>	6,336	5,885	5,570	5,337	6,240	5,827	5,534	5,314	5,718	5,463	5,268	5,616	5,396	5,224	5,521	5,332	5,180
	<b>6</b>	6,096	5,616	5,294	5,063	6,010	5,568	5,266	5,046	5,477	5,212	5,014	5,392	5,159	4,981	5,313	5,109	4,950
	<b>7</b>	5,870	5,371	5,048	4,821	5,793	5,331	5,026	4,809	5,255	4,983	4,785	5,184	4,942	4,761	5,117	4,902	4,738
	<b>8</b>	5,658	5,148	4,826	4,605	5,589	5,114	4,809	4,596	5,049	4,775	4,579	4,988	4,741	4,561	4,931	4,709	4,544
	<b>9</b>	5,460	4,943	4,626	4,412	5,398	4,914	4,612	4,405	4,859	4,584	4,391	4,807	4,557	4,378	4,758	4,531	4,365
	<b>10</b>	5,275	4,755	4,444	4,237	5,218	4,730	4,432	4,231	4,682	4,409	4,221	4,637	4,387	4,211	4,595	4,366	4,200

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	747.0 fc	2.3 ft
6.5 ft	534.9 fc	2.7 ft
7.5 ft	401.7 fc	3.1 ft
8.0 ft	353.1 fc	3.3 ft
10.0 ft	226.0 fc	4.1 ft
12.0 ft	156.9 fc	4.9 ft
14.0 ft	115.3 fc	5.7 ft
16.0 ft	88.3 fc	6.6 ft
20.0 ft	56.5 fc	8.2 ft
24.0 ft	39.2 fc	9.8 ft
28.0 ft	28.8 fc	11.5 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	329,159	329,159	329,159
<b>45.00°</b>	2,564	2,735	3,419
<b>55.00°</b>	44	32	23
<b>65.00°</b>	36	27	34
<b>75.00°</b>	34	33	32
<b>85.00°</b>	105	94	175

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	-23.6	-22.7	-23.2	-22.3	-22.0	-25.4	-24.5	-25.0	-24.2	-23.9
	<b>3H</b>	-21.0	-20.2	-20.6	-19.8	-19.5	-22.4	-21.6	-22.0	-21.2	-20.8
	<b>4H</b>	-19.9	-19.1	-19.5	-18.8	-18.4	-20.7	-19.9	-20.3	-19.6	-19.2
	<b>6H</b>	-18.5	-17.8	-18.0	-17.4	-17.0	-17.7	-17.0	-17.3	-16.6	-16.2
	<b>8H</b>	-17.8	-17.1	-17.3	-16.7	-16.3	-16.8	-16.2	-16.4	-15.8	-15.4
	<b>12H</b>	-16.8	-16.2	-16.3	-15.8	-15.4	-15.8	-15.2	-15.4	-14.8	-14.4
<b>4H</b>	<b>2H</b>	-23.1	-22.4	-22.7	-22.0	-21.6	-24.7	-23.9	-24.2	-23.6	-23.2
	<b>3H</b>	-19.8	-19.2	-19.3	-18.8	-18.3	-21.8	-21.1	-21.3	-20.7	-20.3
	<b>4H</b>	-18.3	-17.8	-17.9	-17.3	-16.9	-19.5	-19.0	-19.1	-18.5	-18.1
	<b>6H</b>	-16.9	-16.4	-16.4	-16.0	-15.5	-16.6	-16.1	-16.1	-15.7	-15.2
	<b>8H</b>	-16.2	-15.8	-15.7	-15.3	-14.8	-15.6	-15.2	-15.2	-14.8	-14.3
	<b>12H</b>	-15.0	-14.7	-14.5	-14.2	-13.7	-14.5	-14.1	-14.0	-13.6	-13.2
<b>8H</b>	<b>4H</b>	-17.9	-17.5	-17.5	-17.1	-16.6	-19.0	-18.5	-18.5	-18.1	-17.6
	<b>6H</b>	-16.3	-16.0	-15.8	-15.5	-15.0	-16.0	-15.7	-15.5	-15.2	-14.7
	<b>8H</b>	-15.5	-15.2	-14.9	-14.6	-14.1	-14.9	-14.6	-14.4	-14.1	-13.6
	<b>12H</b>	-13.7	-13.5	-13.2	-13.0	-12.4	-13.5	-13.3	-13.0	-12.8	-12.2
<b>12H</b>	<b>4H</b>	-17.8	-17.4	-17.3	-16.9	-16.4	-18.8	-18.4	-18.3	-17.9	-17.5
	<b>6H</b>	-16.1	-15.8	-15.5	-15.3	-14.7	-15.9	-15.6	-15.3	-15.1	-14.6
	<b>8H</b>	-15.1	-14.8	-14.6	-14.3	-13.8	-14.6	-14.4	-14.1	-13.9	-13.3

Corrected UGR values based on total output lumens

SHR = 1.0